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Eastern Kentucky PRIDE honors Bickford, Turner

By Mark York
Office of the Secretary

Tony Turner

Eastern Kentucky PRIDE (Personal Responsibility In a Desirable Environment) has honored two men who were instrumental in the creation and early life of the program. The late James E. Bickford, secretary of the Natural Resources and Environmental Protection Cabinet, and the late Tony Turner, vice-president and general manager of WYMT-TV in Hazard, were honored posthumously during the PRIDE Envi Awards ceremony in April.

U.S. Rep. Hal Rogers presented the Kentucky PRIDE awards to the wives of Bickford and Turner.

"I could not possibly list today all the contributions these men made to southern and eastern Kentucky," Rogers said. "Of their many good works, I will highlight one thing as I present this award—they were vital to the creation and success of PRIDE."

Bickford, who passed away last October, co-founded PRIDE with Rogers after the two men gave a speech at a water conference in Louisville in 1997. Bickford and Rogers realized they shared common goals to clean up eastern Kentucky. From that initial conversation came the plans to develop PRIDE.

Turner served as the first chairman of the PRIDE board of directors and on the executive committee. Turner passed away June 30, 2002.

PRIDE serves 38 southern and eastern Kentucky counties and focuses on environmental education, water quality improvement and the elimination of illegal dumps.

Corrections

In the *PRIDE grant money will eliminate illegal dumps* article that appeared on Page 16 of the Spring 2003 issue, Taylor County Fiscal Court was mistakenly listed as a recipient of a 2003 PRIDE SuperGrant. Only 10 grants were awarded, totaling $1,298,885.

The Kentucky PRIDE Fund mentioned in *Solid waste subsidy for a cleaner environment* on Page 5 of the Spring 2003 issue is not affiliated or attached to Eastern Kentucky PRIDE.

Online

Visit *Land, Air & Water* magazine on the World Wide Web at
www.environment.ky.gov/nrepc/landairwater.htm

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Summer 2003
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On the Cover

Kentucky's state flower, the common goldenrod or tall goldenrod (*Solidago canadensis*), presents the perfect companion to a golden sunset photographed in Elliott County, Kentucky. Photography by Thomas G. Barnes, University of Kentucky, Department of Forestry.

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E85 POWERED

Ethanol the "homegrown fuel"

By Tracey Doyle
Division of Energy

Have you ever imagined that trash or food might one day fuel your car? Did you know that corn is already producing transportation fuel? Do you believe that the United States is capable of producing enough fuel to power all engines? Have you ever thought about buying fuel that was produced right down the street? While these things may sound like fiction they are real possibilities using ethanol.

Ethanol is a clear, odorless liquid that is the intoxicating agent found in liquor, but it is also used as a fuel or solvent. Ethanol is also commonly referred to as ethyl alcohol or grain alcohol. While ethanol is typically made from fermented corn, it can also be made from any matter that contains starch. This includes other foods, paper products and even feedstock—all of which can be fermented to make ethanol.

The American Coalition for Ethanol reports that the United States already produces more than 1.6 billion gallons of ethanol per year. This ethanol is primarily corn based—a bushel of corn can produce 2.5 gallons of ethanol when processed—and it also produces other useful by-products such as livestock feed.

Ethanol has been around for many years, but it has recently received attention in the alternative-fuels market. Alternative fuels are defined as any fuel not made from petroleum, such as gasoline or diesel. Kentucky is a leading state when it comes to alternative fuels, as there are currently more than 3,000 alternative-fuel vehicles on Kentucky's roadways.

The most common ethanol-fuel blend, E85, uses ethanol directly as a fuel with a mixture of 15 percent gasoline. Ethanol blends can be used in virtually all gas engines without any necessary engine or mechanical revisions. In fact, many automakers now produce vehicles that can run on ethanol-blended fuel, as well as standard gasoline. According to the American Coalition for Ethanol, more than 1 billion gallons of ethanol are blended with gasoline annually in the United States, and ethanol is already present in 11 percent of all gasoline.

Ethanol is considered beneficial as a transportation fuel because it helps lower tailpipe emissions. The ethanol molecule contains oxygen; therefore, when it is blended with gasoline, it allows the engine to combust fuel more completely and efficiently. Ethanol has also been touted as an alternative to ever-increasing oil imports.

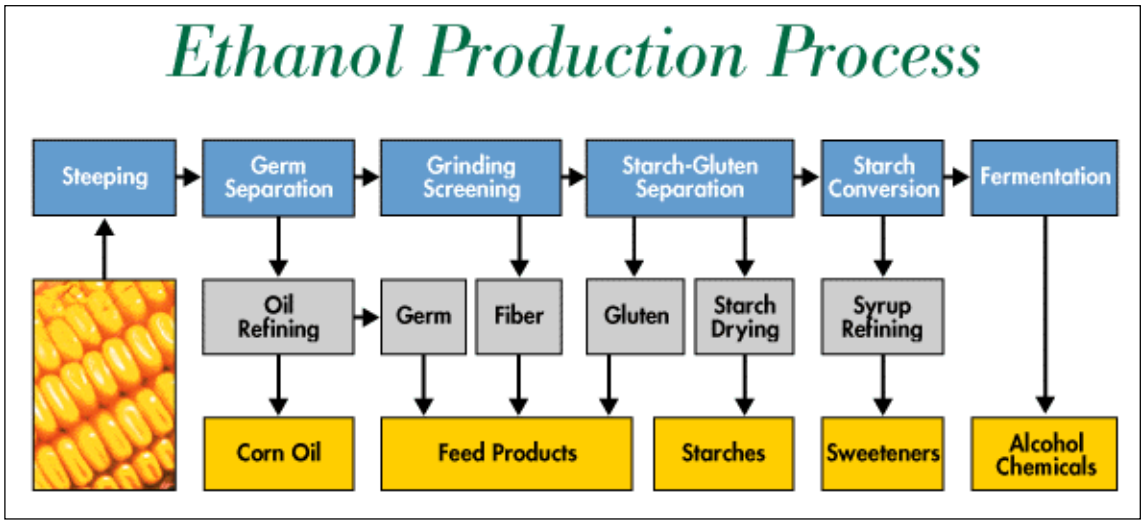
Today one gallon of ethanol produced domestically displaces seven gallons of imported oil. According to the U.S. Department of Agriculture, each British Thermal Unit (BTU) used to produce one BTU of gasoline could be used to produce eight BTUs of ethanol. All of these

Continued on Page 8

ABOVE: ***The Kentucky state government motor pool retains more than 200 ethanol-fueled vehicles in its fleet, specifically the Ford Taurus.*** Photo by Cindy Schafer

RIGHT: ***This schematic illustrates the process by which products are derived from corn. Several steps are performed in order to create a fuel byproduct.*** Schematic property of the Iowa Corn Promotion Board

TOP: E-85 Powered logo property of the National Ethanol Vehicle Coalition



State government working to save energy and money

By Julie Smither
Division of Energy

The Kentucky Division of Energy is working with the Finance and Administration Cabinet and other state agencies to reduce energy use in state facilities. When energy-saving ideas are applied with common sense, building occupants stay comfortable but use less energy. These energy-saving initiatives can provide real dollar savings to help reduce Kentucky's budget shortfall. But to be most effective, a total team effort and, perhaps most of all, vigilance is required.

Governor orders 10 percent energy reduction

In January 2003 the Finance and Administration Cabinet and the Division of Energy met with energy coordinators from each cabinet of state government. The purpose was to develop strategies to strengthen the energy savings program in an effort to achieve a government-wide savings goal of 10 percent of total utility costs as directed by Gov. Paul Patton on Dec. 4, 2002.

At that meeting, various aspects of energy reduction were covered, including operations and maintenance items, analyzing utility bills, tracking usage and low-cost measures that could be implemented immediately.

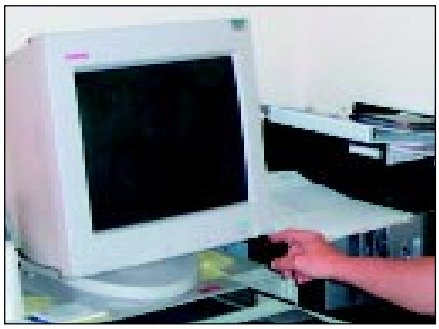
Each cabinet then inventoried its facilities, looking at space heaters, computer monitors, refrigerators, lamps, etc. and developed a plan to meet the 10 percent goal. Although the plans varied among cabinets, all cabinets concluded they could save substantial energy by better managing their lighting needs. This included turning off lights at the end of the day and other times when they are not needed, to removing bulbs from unnecessary lights.

Other measures included reducing air infiltration by tightening doors and windows, resetting thermostats at the end of the day and turning off computer monitors and other energy-consuming items when not in use. Some cabinets committed to working with custodial staff to change their schedules, so less time is needed when lights are on solely to accommodate custodians. One building is now saving $27,000 annually by turning off the lights at night and on weekends. Removing the lights from soft drink vending machines is saving between $48 and $60 a year for each machine.

All cabinets have implemented their energy-reduction plans, and savings are being realized. If the 10 percent savings in state government is attained, state government will save taxpayers more than $10 million annually. The amount saved will be even greater if all state employees are committed to doing everything they can to use energy in their workplaces more efficiently. The cooling season is ahead of us, and state agencies can have a significant impact toward reducing their electric consumption and costs by just using their energy systems wisely.

Energy saved through upgrades and renovations

The Division of Energy is also working to reduce energy use in state government through Energy Savings Performance Contracting (ESPC), a method of procurement that uses the monies generated through energy savings to pay for energy-saving upgrades and renovations.



TOP: ***When possible, employees will replace incandescent bulbs with compact fluorescent bulbs in their desk lamps.***
RIGHT: ***All state employees are being encouraged to turn off their computer monitors whenever they are not in use.***
Photos provided by Division of Energy staff

Examples of these ESPC projects include replacing boilers, upgrading lighting systems and controls, upgrading heating and air-conditioning systems, and upgrading windows and insulation—any improvement that will impact energy usage.

Legislation passed in July 2002 has increased the ease of using ESPC in Kentucky's state government buildings. Nine ESPC projects have begun, ranging from $1 million to $10 million, that will allow state facilities to become more efficient and provide better working environments for its occupants and visitors.

The Kentucky Energy Services Coalition was formed in July 2001 to identify barriers in improving energy efficiency in state government buildings and to make recommendations to remove those barriers. This organization continues to meet and grow, working on improving ESPC processes and on educating facility owners and occupants.

For more information contact Eddie Riddle, Kentucky Division of Energy, at (502) 564-7192. For more information on energy efficiency ideas and initiatives, see the division Web site at **www.energy.ky.gov.**

It's OK to drink the water!

By Maleva Chamberlain
Division of Water

Recently, phones began ringing off the hook at many Kentucky water systems, as well as at the Division of Water's (DOW) complaints coordinator's desk and at DOW regional offices, after many water systems across the state were required to notify their customers of violations.

Specifically, they were required to provide notifications that they had exceeded the maximum contaminant levels (MCLs) for certain disinfectant byproducts. The notices included language about the potential health effects from consuming water with elevated levels of these substances.

Public water systems must notify their customers when they violate U.S. Environmental Protection Agency (EPA) or state drinking water standards (including monitoring requirements) or otherwise provide drinking water that may pose a risk to consumers' health. Despite the EPA's efforts to provide standard language that can be easily understood, consumers often find it confusing, scary and difficult to comprehend. Cindy Mitchell, the Division of Water's complaints coordinator, answered as many as 30 calls from people concerned about their health, their children's health, cancer and immune system problems. Others in the division also received phone calls and e-mail messages expressing similar concerns.

What it's all about

In order to provide safe drinking water, water systems disinfect water during treatment. Without disinfection, bacteria, viruses and microbes could cause disease and possibly death. Before the disinfection of drinking water, dysentery, cholera and typhoid fever were constant threats. According to public health officials, the use of chlorine for disinfecting drinking water is one of the most significant public health achievements of the past century.

However, the disinfectants used (such as chlorine, chloramine, chlorine dioxide, ozone, bromine) can react with substances

There is no need to switch to bottled water. The EPA has taken precautionary measures to protect the public from DBPs.
Photo by Cindy Schafer

that may occur naturally in the water at its source (in a stream or reservoir), like decaying leaves or other organic matter. This reaction creates disinfection byproducts (DBPs), such as trihalomethanes (THMs) and/or haloacetic acids (HAAs). The U.S. EPA has determined that long-term exposure to these byproducts may potentially be cancer causing and thus has set MCLs for them, which water systems must meet.

The MCL for THMs was set in 1979 and was revised in 1998. The new 1998 rule also added HAAs. The new rule went into effect in January 2002, when water systems were required to monitor for these substances every three months. At the end of the year, the quarterly monitoring was averaged and compared with the MCL. If the running annual average showed the level to be more than that set by the EPA, then the water system was to examine its treatment technique to bring the system into compliance. It was also to notify the public of the results of the monitoring. Those averages became available in March, and water systems began the process of notifying the public.

The notices were meant to serve as advisories. The health effects of DBPs are unclear. Some studies have shown no problems whatsoever; others have shown only a slightly higher incidence of bladder and colon cancer in areas where drinking water has been chlorinated. Even though the science is uncertain, the EPA has taken precautionary measures designed to protect the public. It has established MCLs to provide that protection. In order for a person to experience any potential health effects, he or she would have to drink two liters of water containing elevated levels of these substances daily for 70 years. However, the risks of not disinfecting are immediate.

For information about disinfection byproducts, see these Web sites:

- **http://www.epa.gov/safewater/hfacts.html** Click on Disinfection Byproducts.
- **http://www.epa.gov/safewater mcl.html.** Scroll down to Disinfection Byproducts.
- **http://www.epa.gov/safewater/pws/pn/fact.html.** This site describes when, how and why water systems must provide public notices.
- **http://www.epa.gov/safewater/pws/pn/handbook.pdf.** This site contains the handbook that provides the specific language and format that water systems are to use to notify their customers.

Check out the EPA's Safewater site **http://www.epa.gov/safewater/** for additional interesting information. Also see the Kentucky Division of Water's Drinking Water Web site at **http://www.water. ky.gov/dw/.**

What's being done

Water systems, with assistance from the Division of Water when needed, will be adjusting their treatment processes to bring them into compliance. How they will accomplish this will depend upon what substances are in their source water, what chemicals they use for disinfection and other technical aspects of the treatment process at each individual treatment plant.

Continued on next page

New methods of utilizing equine waste protect water quality

By Rosetta Fackler
Division of Water

This picture was taken in Woodford County on a horse farm along McCracken Pike. Photo by Kerry Holt

It's that time of year when the world turns to horse racing. With the first Saturday in May just passed, we saw images of rolling, lush green fields, white fences and frolicking horses. Yes, that's Kentucky, thoroughbred horse capital of the world.

The thoroughbred industry in Kentucky employs more than 80,000 people, and every day horse farms in five of Kentucky's 120 counties dispose of nearly 1,000 tons of horse muck, largely bedding materials, but with enough manure content to pose an environmental concern.

Thanks to a Clean Water Act Section 319(h) project titled "Equine Waste BMP Demonstration Project–Demonstrating New Technologies for Composting Stable Muck Onsite and for Handling Stable Muck to Offsite Facilities," Kentuckians can protect water quality and promote environmentally friendly disposal of muck as opposed to disposal in sinkholes, historically a favorite disposal method.

The demonstration project encompassed an 11,462-acre area around the Houston Creek Watershed, associated with the Inner Bluegrass Karst Aquifers that is particularly sensitive and vulnerable to groundwater contamination. Four farms took part in the $205,000 project, which tested composting and roll baling technology.

Some muck was roll baled and sold for other uses, such as growing mushrooms or for feed. The most successful part of the project, however, was the conversion of horse muck into compost. The process involves the use of windrows, of an appropriate size and energy needed to accommodate the tractors generally used in the area, and using smaller manure spreaders. Kentuckians can utilize horse muck as a valuable soil amendment and help improve water quality.

See Nonpoint Source Technical Bulletin #4 at **http://water. nr.state.ky.us/nps/NPS_Home.htm** or request a copy of the video "Managing Equine Waste: Challenges and Options" from the Kentucky Division of Water, Nonpoint Source Section.

It's OK to drink the water!

Continued from Page 3

What the consumer can do

There is no need to switch to bottled water instead of tap water if your water system was one of the many that sent out these notifications. If you are concerned about the presence of these substances in your drinking water, you should know that trihalomethanes dissipate from water very readily, especially when heated. So, when water is heated in making coffee or tea, the THM levels will be greatly reduced.

For cold drinking water or other cold beverages made with water, allowing a pitcher or other container of water to sit uncovered at room temperature for several hours, such as overnight, before refrigeration will allow much of the trihalomethane concentration to dissipate from the water.

Small grant pays big dividends

By Rosetta Fackler
Division of Water

In 1995 the Appalachia Clean Water Partners (ACWP) applied for a minigrant from the Kentucky Waterways Alliance (KWA). The umbrella grant was provided through Section 319(h) of the Clean Water Act and was awarded by the Kentucky Division of Water to KWA.

From this small seed grant of $2,200 and an equal amount in nonfederal match, ACWP conducted the Big Sandy Water Quality Education Project and sponsored an environmental day at Prestonsburg Community College where 15 agencies and more than 800 people participated.

Following shortly after, ACWP developed water education displays at the Jenny Wiley Regional Environmental Day, assisted area students to prepare for the water quality section of the Science Olympiad, purchased educational materials and sponsored and helped organize the Big Sandy Watershed Conference in March 1998. The watershed conference attracted participants from the tri-state area that comprises the Big Sandy Watershed and was so successful that follow-up conferences have been held every year since.

The most recent success from this core grant is the development of the Interstate Water Quality Coalition, which has brought together citizens, agencies and local officials to discuss and plan the future of water quality in the Big Sandy River.

Assessing Kentucky's noncoal mining program

By Pamela Carew and Roy McQueary
Department for Surface Mining Reclamation and Enforcement

Mining for limestone, sand and gravel in Kentucky is a profitable business. There are currently 209 permitted noncoal mining sites alone in the state, totaling 38,588 acres. Approximately 57 percent of those sites are limestone mines.

Nearly two years ago in a surprise move, Gov. Paul Patton issued an executive order temporarily halting the issuance of noncoal mining permits. After listening to the concerns of Kentuckians across the Commonwealth, Patton directed the Natural Resources and Environmental Protection Cabinet (NREPC) to review the laws and regulations related to noncoal mining and to study the environmental impacts of the laws. The order emphasized that regulations related to bonding, safety barriers/fencing, elimination and reduction of highwalls, access roads and open pits be particularly scrutinized. The review and recommendations were to be completed by Jan. 1, 2002.

The Department for Surface Mining Reclamation and Enforcement's (DSMRE) Noncoal Review Branch regulates and enforces Kentucky's surface mining laws and regulations for noncoal mining sites, or quarries. This also includes clay, shale, and surface effects of dredging river sand and gravel.

Environmental inspectors review permit applications both on the ground and in the office to insure that all applicable laws are addressed and that the environment and public are protected.

The mining and reclamation plan contained in the permit application covers information concerning ownership of the proposed operation, as well as equipment, method of mining, spoil generation and handling, back filling and grading of pits and highwalls, revegetation, post-mining land use and the protection of surface water.

So that the public may be informed of any proposed operations, applicants for a new noncoal permit must advertise their intent to mine in local newspapers. Persons whose interests may be affected by the proposed mine can request an informal conference to express their concerns. Those concerns are then considered during the permit application and modifications to the plans, designs, permit boundary or method of mining may result.

Following the executive order's January 2002 deadline, the NREPC prepared a report recommending that a number of regulations be amended or promulgated. The order was also amended to lift the moratorium on all noncoal mining permits except limestone mining and all noncoal mining located within 500 feet of the crest of Pine Mountain.

On Dec. 13, 2002, emergency regulations were issued. They are still currently in effect and pertain to the following issues:

- Bonding is required for all new permits.
- Transportation plans are now required for all new permits.
- Amendments to existing permits must be advertised.
- Valid existing permits are exempt from a number of buffer zones and distance requirements associated with public lands.
- Safety barriers and warning signs are required above highwalls of 15 feet or more.
- Safety and warning signs are required around the permit boundary.
- Waste rock generated from sand, clay and gravel mining operations must be returned to the pit. Waste rock generated from limestone mining operations must be used to reclaim the highwall.
- Temporary cessation of operations for 12 months or more will require an additional posting of bond.
- No blasting operations can be conducted on new permits or some existing permits until warning signs are posted, residents within 1,500 feet of the blasting area are notified, and requested surveys of houses and other structures conditions are conducted.
- Permittees must obtain approval of residents living within 300 feet of the proposed permit boundary of the operation.
- Water supplies impacted by the mining operation will be replaced.

The cabinet is currently promulgating new regulations that will replace the emergency regulations. A public hearing was held in February, and the cabinet received 35 public comments. You can view the emergency regulations in their entirety at **http://www.surfacemining.ky.gov/noncoal_proposed_regs.htm**

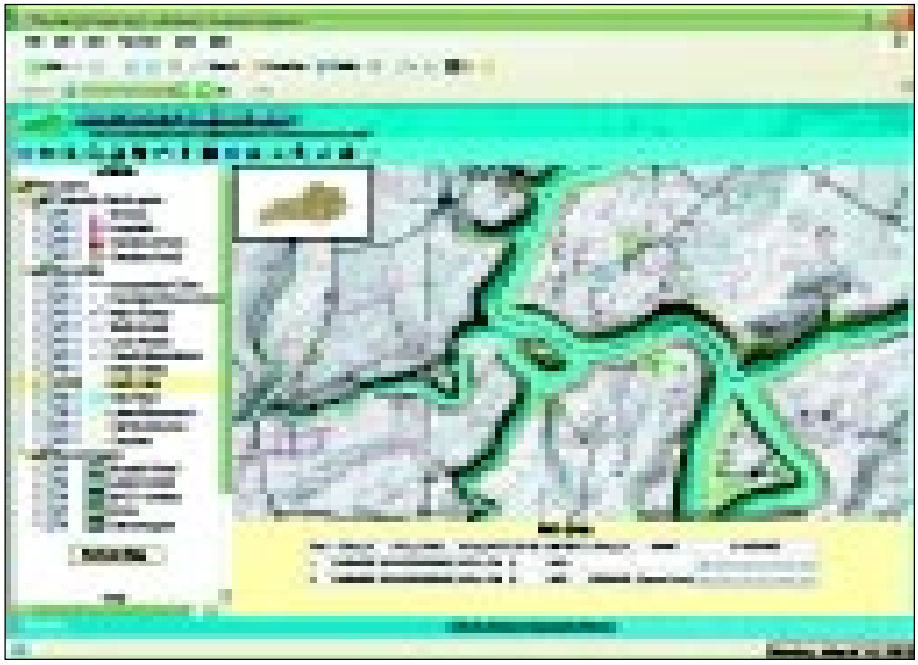
Somerset Stone Co. began its operation in the 1940s. The highwall is approaching 200 feet in height. Protective measures, fences, and berms have been placed around the perimeter of the site to control access. Photo provided by the Department for Surface Mining Reclamation and Enforcement

Kentucky completes digital map of surface waters, streams and rivers

This article previously appeared in Techlines—Commonwealth of Kentucky Technology News

By John Penfield, Office of Information Services; Bruce Bauch, U.S. Geological Survey; Scott Render, Governor's Office of Technology; and Lee Colten, Division of Water

The Commonwealth of Kentucky has become the first state in the continental United States to complete a highly detailed digital map of its streams, rivers and other surface waterbodies statewide. The new 1:24,000-scale surface water digital map represents a significant improvement in mapping accuracy and is Kentucky's contribution to the National Hydrography Dataset (NHD). This accomplishment, completed with significant help from the U.S. Geological Survey (USGS), adds yet another valuable layer to the Kentucky statewide basemap.



Used for scientific study

The new NHD allows for advanced applications in Geographic Information Systems by creating a comprehensive hydrologic network so that all surface water can be modeled to flow from the stream headwaters to the rivers flowing out of the state.

The Kentucky Division of Water has found this mapping technology may be used to:

- display or select all sampling points or environmental data upstream or downstream of a given point;
- link water information such as water chemistry, flow rates and fish habitat to this network to determine the contributing upstream and affected downstream watersheds;
- assess impacts of spills on downstream drinking water intakes;
- evaluate location of permitted discharges relative to drinking water intakes; and

nt loading.

latabases

e Environmental has approximately s of water quality to the medium resolu- wly completed high or Kentucky will give tailed look at the water te. The high resolution duction for the rest of entucky joining states to be completed. le online through the hy Network **http://kygeonet.state.ky.us,** the Governor's Office for Technology's Office of Geographic Information **http://ogis.state.ky.us,** and the USGS **http://nhd. usgs.gov/**

For more information contact Scott Render at (502) 564-8747.

ABOVE: ***This graphic is an online example of Kentucky's basemap.***

LEFT: ***Stephen Dooley (left), Governor's Office for Technology (GOT), and John Penfield, Natural Resources and Environmental Protection Cabinet and Geographic Information Advisory Council chair, accept a plaque from Kari Craun of the USGS in recognition of Kentucky's efforts.*** Graphic and photo provided by Scott Render, GOT

A manager's philosophy on compliance

By Rose Marie Wilmoth
Air Quality Representative

As branch manager of the Division for Air Quality's (DAQ) Enforcement Branch, Pat Johnston is all too familiar with what it takes to keep businesses in compliance with the Clean Air Act.

Johnston's days are filled with reviewing enforcement cases and assigning them to one of four enforcement specialists within her branch. She converses daily with regional office staff to discuss and determine violations before a particular case ever reaches her desk.

Small businesses need to be proactive and be aware of the consequences of violating their permit conditions.

The Enforcement Branch processes cases that result from violations of the air quality regulatory program. To the extent possible, the branch resolves as many of the cases as it can. However, those that are not resolved are sent to the Office of Legal Services for resolution.

Johnston has worked for the Natural Resources and Environmental Protection Cabinet since 1991. Initially, she began her cabinet career with the Office of Legal Services, but transferred to the Division for Air Quality's Enforcement Branch in 1995.

DAQ enforcement philosophy

Johnston fosters a philosophy in managing the Enforcement Branch—that it be fair, consistent and uniform in enforcing the DAQ regulatory program. "The group does their job professionally and fairly. This includes giving each company an opportunity to discuss its violation," Johnston said. She also stresses that confidentiality is a must in every case.

How to stay in compliance

Johnston has specific suggestions on how to stay in compliance. "Small businesses need to review their permit. This helps to avoid problems when submitting permit renewals and annual compliance certificates in a timely manner," she said. Reviewing the permit is an opportunity to note important compliance requirements and due dates.

"Don't ignore letters or due dates. A significant number of small businesses don't renew their permits, and doing nothing will lead to enforcement action," said Johnston.

Assistance available

As an alternative to doing nothing, Johnston encourages small business owners to call the DAQ regional office that serves their area. "These people are knowledgeable about the air quality regulatory program. They will be able to answer your questions or refer you to people in the central office," she said.

Small businesses with less than 100 employees, independently owned and not a major source, may be referred to the Kentucky Business Environmental Assistance Program (KBEAP). By meeting these criteria, small businesses are eligible for air quality on-site technical and compliance assistance from KBEAP free of charge. A small business that meets the eligibility criteria may call KBEAP directly and request confidential assistance. For more information call Greg Copley at (800)562-2327.

When deliberating a case, the Enforcement Branch takes into consideration a business that works with one of the DAQ regional offices and/or KBEAP.

Small business enforcement action

"If, despite its best efforts, a business finds itself in an enforcement action it is better to have a proactive approach and take remedial action to return to compliance as quickly as possible," Johnston says.

Why is a permit required before construction?

Many violations occur due to the requirement that companies obtain an air quality permit before starting construction.

Compliance with many of the operating requirements of the air quality program require air pollution controls be installed during construction.

Closing message

Johnston summarized her message to small businesses by saying, "make every effort to avoid enforcement actions. If you have questions about your permit conditions or compliance, call a Division for Air Quality regional office or the KBEAP."

More information is available about DAQ and KBEAP by visiting the division's Web site **http://www.air.ky.gov** or by calling (502) 573-3382.

Check out Page 8 to find out how to nominate a business for the Air Quality Stewardship Awards.

Ethanol the "homegrown" fuel

Continued from Page 1

factors add up to give ethanol an advantage as an automotive fuel. Kentucky is taking advantage of these factors. There are many entities that are currently using E85 to power their vehicles:

- The Commonwealth of Kentucky has more than 200 E85 vehicles in its fleet;
- Mammoth Cave National Park has converted all of its vehicles to ethanol;
- The University of Kentucky and Murray State University have converted part of their fleets and have on-site refueling stations; and
- Fort Knox Military Reservation is using more than 280 E85 vehicles.

Kentucky is also leading the ethanol arena by assembling supporters of ethanol from various backgrounds. In February the Kentucky Division of Energy, Kentucky Farm Bureau Federation, Kentucky Corn Growers Association and Kentucky Clean Fuels Coalition hosted a workshop in Frankfort titled, "Fuel Ethanol in Kentucky: A Growing Opportunity." The U.S. Department of Energy sponsored the workshop and it attracted a wide range of ethanol supporters from politicians to business officials to farmers. During the workshop participants learned about expanding the ethanol market, uses of ethanol byproducts and promoting ethanol as a feasible product for Kentucky farmers. They also had an opportunity to brainstorm policy options for the future of ethanol in Kentucky.

Sen. Joey Pendleton, D-Hopkinsville, attended the workshop and stated, "we've got a promising fuel source that could really help improve our state's agricultural economy if we do all we can to promote and expand the ethanol market. It's important for state leaders to recognize this is a key to diversifying our state's agricultural interests."

Not only is Kentucky a leader in using ethanol vehicles, but it is also one of the few states that produces its own ethanol—hence the label "homegrown fuel."

The Hopkinsville Elevator Co. is a local co-op that has created a 20-million-gallon-per-year fuel ethanol processing plant in Christian County, known as Commonwealth Agri-Energy. When operational this plant will process approximately seven million bushels of corn and wheat annually. These resources will be used to produce 20 million gallons of fuel-grade ethanol. The plant will also produce 58,400 tons of distiller's dry grains, a byproduct of ethanol production used as livestock feed.

By encouraging local farmers to produce corn and wheat, farmers can help offset the loss of revenue from tobacco that is being phased out as the state's main cash crop. This production of corn and wheat for the ethanol plant is also expected to help raise the local prices, adding to the farmers' revenue. This increase in profits can be corroborated through a University of Missouri study that evaluated a recently built ethanol plant's impact on the local price of corn. The study concluded that annual corn revenues in the nine counties surrounding the plant have increased by $4.12 million.

Christian Hans, an agribusiness management student who conducted the study, concluded, "there is a perception that when an ethanol plant opens, local corn prices will increase, but no one had actually evaluated a plant's impact. Our results indicate that the overall impact on commodity prices can be substantial." This is promising news for the 30-county co-op members who will be selling their corn to the Commonwealth Agri-Energy ethanol plant in Hopkinsville.

Ethanol is also gaining national attention as our nation's energy policy is being reshaped for the first time in a decade. As part of the nation's broad energy bill under consideration by the U.S. Congress, several key points are being made concerning ethanol. In one proposal, the U.S. House Energy and Commerce Committee is considering boosting U.S. ethanol use from 2.7 billion gallons in 2005 to 5 billion gallons in 2015. Currently in the United States there are more than 80 ethanol production facilities in 20 states in operation or under construction.

According to the Renewable Fuels Association, Kentucky, Missouri and Florida are the only southern states with operating ethanol plants. Kentucky is well on its way to being a leader and showcase state when it comes to ethanol.

Small business recognition to take place in October

By Rose Marie Wilmoth
Air Quality Representative

The Air Quality Small Business Panel is currently accepting nominations for its 2003 Small Business Air Quality Stewardship Awards. This is the sixth year the panel has offered the awards.

During the previous five years, 14 small businesses have been recognized for their air quality stewardship practices. The awards will be presented at a luncheon on Oct. 7, 2003, at Berry Hill Mansion in Frankfort, Ky.

Why are the awards given

The purpose of the awards is to recognize small businesses that have shown a commitment to reduce their operations' impact on air quality.

The annual awards acknowledge exemplary performance in one or more of the following areas—pollution prevention, reducing emissions, emission control and/or community air quality leadership.

Who may nominate

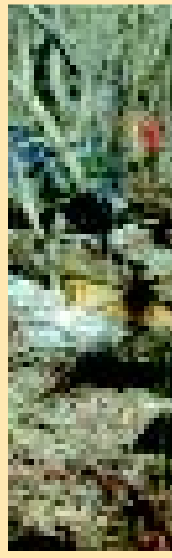
Individuals, businesses and organizations may nominate themselves or others for this award. A committee of advisory panel members will evaluate the nominations and select a winner(s).

How do I obtain nomination forms

Nomination forms are available by contacting Bobbie Malmer, Commissioner's Office, Department for Environmental Protection, 14 Reilly Road, Frankfort, KY 40601 or by calling (502) 564-2150. Nomination forms also may be printed or completed online at **http://www.nr.state.ky.us/nrepc/dep/smbizair/award.htm**

What is the 2003 award deadline

All nominations must be received in the Commissioner's Office at the above address **no later than Aug. 15, 2003.**



The prize patrol comes to town!

Commonwealth Cleanup Week pays off for area volunteers

By Kerry V. Holt
Office of the Secretary

Imagine coming home from work to find a surprising announcement on your answering machine.

"Congratulations you've won $500!" . . . that was the message Teresa Davis heard one April afternoon. No, Ed McMahon and his prize patrol won't be on her doorstep anytime soon, but Davis and the Etoile 4-H Club were one of three nonprofit groups that won cash prizes just by participating in Commonwealth Cleanup Week.

As a show of appreciation to volunteers the Natural Resources and Environmental Protection Cabinet (NREPC) gives away cash prizes in a random drawing upon the conclusion of Commonwealth Cleanup Week.

The prize drawing is open to civic groups, religious and charitable organizations and other nonprofit groups. Groups must register for and complete a cleanup project to be entered in the random drawing. A total of three prizes—$500, $250 and $100—are given away.

Davis' group won the $500 grand prize for their time spent cleaning up the grounds of the Caney Fork Baptist Church's cemetery in Barren County. During the week of March 22-29, several 4-H volunteers collected 20 bags of garbage from the area. Volunteers hauled away two-and-a half truckloads of trash and debris and deposited nearly one-half ton of garbage into the city of Glasgow's landfill.

In a special ceremony at the Barren County Courthouse, Mark York, deputy secretary of the NREPC, presented the Etoile 4-H Club with their prize winnings. Davis says the money will go toward sending the club's student president to a leadership camp in Georgia. With travel expenses mounting Davis admits, "the check presentation couldn't have come at a better time."

Two other groups were also financially rewarded for their cleanup efforts. Members of the Big Bone Baptist Church in Union, Ky., were pleased to receive a check for $250. Several church members picked up 20 bags of garbage from around the church property and along nearby Big Bone Road. Volunteers also disposed of 10 waste tires that had been abandoned along the roadway. Pastor David Denna accepted the check on behalf of the Big Bone Baptist Church congregation.

Members of the Springfield Lions Club were the recipients of the $100 cash prize. Club members picked up nearly 70 bags of garbage along Lincoln Park Road in Washington County. George Ann Palmer, Washington County solid waste coordinator, says the cash-prize incentive program is a great way to promote community involvement and bring attention to her litter prevention campaign. "Because the club has won this money, it's really gotten a lot of media attention, and more folks are wanting to know how they can participate next year," Palmer elaborated.

While the three prize winners were highlighted for their cleanup projects, they were just a handful of the participants in a very successful Commonwealth Cleanup Week.

Nearly 22,000 people representing 87 counties participated in area cleanup activities. In all, more than 6,000 abandoned appliances were disposed of, along with 51,865 bags of trash and 79,837 waste tires. A variety of volunteers joined forces to make Kentucky a cleaner state. From fire departments to Kiwanis clubs, everyone lent a hand including NREPC Secretary Henry C. List.

List rolled up his sleeves and participated in several cabinet-sponsored cleanup events throughout the state. While touring dumps in Carter, Kenton and Jessamine counties Secretary List pointed out that illegal dumps can form anywhere, and they affect much more than the landscape.

"The cleanup of illegal dumps produces many benefits for Kentucky," List said. "We believe not only will Kentucky's environment profit from the elimination of illegal dumps, but economic development and tourism development efforts will benefit as well. No business or tourist will want to come to a state or county with illegal dumps."

In Pike County Gov. Paul Patton joined Secretary List for a trash pickup along the banks of Lick Creek near the community of Mouthcard. Though it would be Patton's last Commonwealth Cleanup Week as governor he hoped the annual events would be a priority for future administrations.

"As the former judge-executive of Pike County I am pleased that our local government has partnered with the Natural Resources and Environmental Protection Cabinet for the cleanup of this illegal dump," Patton said. "Cleaning up Kentucky has been a top priority of our administration, and although great progress has been made more work remains to be done."

All nonprofit groups are encouraged to participate in next year's Commonwealth Cleanup Week, which runs March 20-27. For more information visit **http://www.environment.ky.gov/nrepc/cabinet/cleanupprize.htm** or call 1-888-NO DUMPS.

TOP PHOTO: ***A loader scooped up trash collected from an illegal dump in Pike County.***
UPPER LEFT: ***The Etoile 4-H Club was presented with its $500 cash award by NREPC Deputy Secretary Mark York (right).***
OPPOSITE AND ABOVE: ***NREPC Secretary Henry C. List picked up trash on this hillside in Kenton County.***
Photos by Kerry Holt

Cabinet suffers further budget cuts

By Mark York
Office of the Secretary

After failing to enact a budget in the 2002 General Assembly session the Kentucky Legislature adopted a $14 billion budget for the Commonwealth during its session earlier this year.

Focusing on reduced spending rather than raising revenue, the legislature approved bonds for projects, including more than 200 water and sewer projects across the state.

The approved spending plan continued a trend to reduce the Natural Resources and Environmental Protection Cabinet's (NREPC) budget through June 2004. Since fiscal year 2002, the cabinet has had its budget reduced by more than 11 percent.

The budget bill passed by the general assembly removed $3 million from a coal operator's bond pool, $500,000 from the waste tire trust fund and $900,000 from the Department for Natural Resources.

The legislature also removed the entire funding for the Environmental Quality Commission (EQC). Gov. Paul Patton and Henry C. List, secretary of the NREPC, pledged to find funding for the EQC from within the cabinet's budget.

The action to remove $3 million from the bond pool prompted an inquiry from the federal Office of Surface Mining (OSM), which has oversight responsibility for the state-run surface mining program. Correspondence from OSM to the cabinet indicated the $3 million should not be moved from the bond pool program until the state seeks to amend Kentucky's approved surface mining program.

One positive note to the budget bill was the approval of 267 water and sewer improvement projects across the state. Financing for system expansions and improvement will come from the issuance of bonds.

An estimated 700,000 Kentucky households will receive improved water service as a result of the $377 million in projects. Wastewater treatment across the state will also improve under the projects.

Kentucky's wildlife is theme of 2003 contests

By Martin Bess
Division of Conservation

What is the value and importance of Kentucky's wildlife, and how serious are we in conserving this resource?

Students will get a chance to learn more about wildlife, while expressing their opinions and ideas in the annual Conservation Writing and Jim Claypool Art contests. This year's contest theme is *Kentucky's Wildlife—Rediscovering its Value.*

Last year more than 100,000 Kentucky students participated in the contests. The winners of each contest receive a $500 savings bond, second-place finishers receive a $300 bond, while area winners receive a $100 bond.

Teachers and students can find contest rules in the contest tabloid publication that will be available in September. This 12-page information guide includes a teacher's insert and a timeline of wildlife and events affecting various species in the Kentucky area. The tabloid lists approximate dates for the disappearance of the elk and the river otter and their restocking, the settlement of Kentucky, the impoundment of Kentucky's lakes and the establishment of wildlife management areas. There is also a wildlife Web page that lists other wildlife activities and information resources.

Students in grades 1-5 are eligible to participate in the art contest. Students must be in grades 6-12 to enter the writing contest. Students may not enter both contests during the same school year.

For more information or for a contest tabloid publication, contact your local conservation district or the Kentucky Division of Conservation at (502) 564-3080 or e-mail Martin.Bess@mail.state.ky.us.

The Courier-Journal sponsors the program in cooperation with the Kentucky Association of Conservation Districts and Kentucky Farm Bureau with guidance from the Kentucky Division of Conservation. Other supporters include the Kentucky Division of Forestry, Division of Water, Kentucky State Nature Preserves Commission, Department of Agriculture, Department of Education, Environmental Education Council, Kentucky Department of Fish and Wildlife Resources, Natural Resources and Environmental Protection Cabinet, USDA Natural Resources Conservation Service, University of Kentucky Cooperative Extension Service and the Kentucky State Fair.

To read and see last year's winning selections go to **http://www.courier-journal.com/youngachievers/index.html**

Communicating with Kentucky counties about new ozone standard

By Lona Brewer
Division for Air Quality

Division for Air Quality staff have been traveling the state this spring meeting with local government and business leaders on the potential impacts of the new, more stringent 8-hour ozone standard. "It only makes sense for us to meet with local officials and help them understand what the U.S. Environmental Protection Agency (EPA) will be requiring of Kentucky in the upcoming months," stated John Lyons, director of the Division for Air Quality. He has been touring the state with members of the Program Planning and Administration Branch to explain these important issues to local communities.

Ozone, a colorless gas, is the major component of smog. It can present a serious air quality problem for healthy people, and it can cause severe problems for people with existing respiratory or pulmonary illnesses, the very young and the elderly. Ground-level ozone pollution is formed during the hot summer months by a chemical reaction between volatile organic compounds (VOCs) and oxides of nitrogen (NOx), heat, strong sunlight and humidity. Sources of VOCs include automobiles, trucks, buses, gasoline stations, some industries, print shops, consumer products (such as paints and cleaners) and off-road engines such as those in lawn and garden equipment, construction equipment and locomotives. The biggest sources of NOx emissions are typically large industry and combustion sources, including electric utilities.

Because there are many sources of VOCs and NOx, ozone is difficult to control. Although ozone levels have declined in many areas of the state, research has shown that lower levels of ozone over longer periods can be even more harmful than the "peaks" regulated under the previous standard.

The 8-hour ozone standard, originally adopted in September 1997, underwent significant legal challenges. In February 2002, the Supreme Court upheld the EPA's authority under the Clean Air Act to set national air quality standards and to revise those standards when research deemed necessary. However, the courts also struck down the EPA's implementation plan for that standard, forcing the EPA to redraft how best to implement the standard. The implementation plan, when finalized, will provide the states with timetables and expectations on when new plans must be submitted to the EPA for areas not meeting the standard and what those plans must include.

The "old" ozone standard, was a 1-hour standard set at .120 parts per million (ppm). An air quality monitor could record up to three exceedances of this standard in three years and still remain in compliance with this standard. If a fourth exceedance was monitored, the area was considered in violation.

The new standard is more stringent than the old 1-hour standard and was designed to add an additional level of protection for children, the elderly and people with respiratory problems.

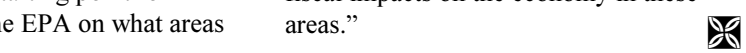
The new standard is more stringent than the old 1-hour standard and was designed to add an additional level of protection for children, the elderly and people with respiratory problems. It is an 8-hour standard, set at .08 ppm. Monitoring data is averaged over a different time period and the fourth highest 8-hour level for the monitoring season is used to help determine whether an area is meeting the standard. That fourth highest average for each year is used for three consecutive years in determining the final average. If that average is .084 ppm or less the area is meeting the standard. If that three year average is .085 ppm or greater the area is considered in violation.

The EPA requires all states to submit proposals for designations under the new 8-hour standard by July 15, 2003. This proposal will be a starting point for negotiations with the EPA on what areas of the state it will eventually designate as meeting (attaining) or not meeting (nonattainment) the standard. The EPA is expected to make final designations by April 15, 2004.

In July states will be submitting information to the EPA based on monitoring years 2000-2002. By the time the EPA makes the final designations in April 2004, the 2003 ozone monitoring season will be available to use, making the three-year period 2001-03.

The meetings with local officials have been well attended at each location. Although not happy to hear that their communities may have unhealthy air quality, everyone wants to know what the impacts will be and what actions they can take on a local level to help improve their situation.

The message was clear that local communities want clean air for its citizens, some of whom suffer from respiratory illnesses, such as asthma. Everyone deserves to breathe clean air. As the agency develops plans for each area, more meetings will take place to receive input from local officials and organizations. "We must develop the best plan possible for each of our areas," stated Lyons. "We must develop plans to bring our local areas back into compliance with the air quality standards for the health of our citizens, while limiting to the extent possible the fiscal impacts on the economy in these areas."



Metals meet their match with new technology

By Lee Ruggles
Division of Environmental Services

During a time when modern technology is booming, the Department for Environmental Protection's Division of Environmental Services is taking its testing facility to a new level.

The division's chemistry laboratory acquired an *Agilent 7500i* Inductively Coupled Plasma Mass Spectrometer (ICP-MS) in May 2002. This precision instrument can test for metal contaminants in environmental samples at the sub-part-per-billion level, a fraction of a microgram per liter.

This technology represents the state of the art in metals testing for the environmental laboratory and cost $150,000. This purchase was made possible by a grant provided by the U.S. Environmental Protection Agency (EPA).

Michael Goss, supervisor of the Metals Section, is the primary operator of the ICP-MS. After receiving extensive analyst training and performing a host of initial demonstrations during the past year, the EPA recently granted approval for the laboratory to begin using the newer technology. Goss currently uses the instrument to measure up to 18 different metals at ultra-trace levels in water samples collected by the Division of Water in support of their monitoring programs. The instrument is also used to support the Rural Trends Monitoring Program operated by the Division for Air Quality. As methods for other matrices are developed, the technology will be used to support all of the department's programs.

Chief Metals Analyst Michael Goss performs a metal test using the ICP-MS on a water sample collected by the Division of Water. Photo provided by the Division of Environmental Services

The addition of ICP-MS technology has been a long-sought goal of the laboratory. The lowered detection limits will enable the department's programs to better track the trends occurring in Kentucky's environment.

Forestry firefighters carry a heavy load

By Gwen Holt
Division of Forestry

In recent years, a tremendous outbreak of wildland fires in Kentucky has kept Division of Forestry firefighters busy and in need of emergency assistance from other resources. Kentucky's forestry firefighters, in return, are called upon to assist other states when they are facing the same situation.

Division of Forestry employees have the opportunity to battle fires out of state when their services are needed but not before they pass the work capacity test, commonly referred to as the "pack test."

Division of Forestry employees take a vigorous walk around a track-and-field course at a nearby facility. Division of Forestry photo

The pack test measures the fitness level of employees. Firefighting is tough work and demands a high level of fitness to safely perform activities and respond to potential emergencies.

Employees are required to pass the capacity level designated for the job they will be performing. There are three work-capacity levels—light, moderate and arduous. The light-capacity level requires employees to walk one mile in 16 minutes. The moderate level requires employees to walk two miles in 30 minutes carrying a 25-pound backpack, and the arduous level requires employees to walk three miles in 45 minutes carrying a 45-pound pack.

Before division employees take the test, they must complete a medical questionnaire and may be required to get clearance from their doctor. Employees are notified of the test dates early enough for them to condition themselves.

Since implementing the pack test three years ago, nearly all the employees who have taken the test have passed.

The test must be passed annually.

Soccer, track fields built on abandoned strip mine

By Steve Hohmann
Dept. for Surface Mining Reclamation and Enforcement

Next spring, some lucky Letcher County school children will be playing soccer and running track on their new soccer and track fields thanks in part to the Natural Resources and Environmental Protection Cabinet.

During the Christmas holidays, the cabinet's Division of Abandoned Mine Lands (AML) was contacted by Letcher County School Superintendent Anna Craft. She wanted to inform the AML that the planning stages to construct a new consolidated high school on an abandoned mine site were under way and that funding assistance was needed.

The AML concluded that the site was eligible for reclamation through AML funding, however it was deemed a low priority. Priority is determined based on the probability that a mine site will damage the environment or create safety hazards to citizens.

In a vigilant attempt to assist Letcher County, AML representatives, along with the Letcher County school system and the federal Office of Surface Mining, relied on a federal initiative called the "Mine Fields to Soccer Fields" program. U.S. Soccer Foundation representatives confirmed that the program's goal is to promote soccer by applying various regulatory and funding techniques to develop soccer facilities. This program enabled the AML to move this abandoned mine site to a high priority for reclamation.

During a grant presentation in March, the school system received $150,000 from the federal Abandoned Mine Lands fund to assist in the cost of site preparation for a soccer and track field that will be located on the new school campus on the abandoned mine site.

Rep. Howard Cornett, R-Whitesburg, said that Letcher County and other coal-producing counties were fortunate that they had coal revenue to assist them in funding infrastructure projects. "The school system and our schools are as much a part of our infrastructure as anything can be," he said.

Students outwit beavers' natural instincts

By Mark Meade
Department for Surface Mining Reclamation and Enforcement

Nature's engineer, the beaver, is arguably the most effective animal, besides humans, at changing its environment to suit its needs. Such is the case near the Pine Mountain Settlement School in Harlan County.

Upon the successful completion of the Dollar Branch reclamation and stream mitigation project in 1999, beavers took up residence in a pond at the upstream end of the project. Dollar Branch was once an unreclaimed coal processing and refuse disposal site. After years of being an eyesore to the community, an agreement was reached between the involved parties that lead to the site's reclamation.

The area is now home to these industrious beavers. However, they are causing some real concern for local landowners. The beavers built a large dam in the spillway of the pond as well as three small dams downstream, which caused the water to rise four feet. While the only victims of the activity were some gnawed and flooded trees, the possibility of these mammals damming a four-foot diameter culvert pipe was probable. If the pipe were to become plugged, the entire upper end of the reclamation project would be under water.

The Division of Abandoned Mine Lands researched the situation and with help from Joyce Fitzgerald, Kentucky Department of Fish and Wildlife Resources, decided to construct a "beaver deceiver" in front of the culvert.

Nancy Adams, director of the Pine Mountain Settlement School, was contacted about the project, and she explained that school groups often come to the school to study the environment. As part of their education, students do actual "hands-on" environmental work. The installation of the beaver deceiver was an excellent fit for this activity.

Students construct the beaver deceiver, which prevents the mammals from gaining access to the culvert pipe. Cabinet photo

In April a group of kids and counselors from the Kentucky Country Day School in Louisville constructed a three-sided pen in front of the culvert to prevent the beavers from accessing the area. The pen makes getting dam-building materials in the pipe difficult, but still allows free flow of water into the pipe.

The settlement school's David Shepherd helped the students install the beaver deceiver and also picked up a truckload of trash along Route 221 near the Dollar Branch project. Their efforts helped the landowners, the Division of Abandoned Mine Lands and some beavers. For more information about the Pine Mountain Settlement School visit its Web site at **http://www.pinemountainsettlementschool.com** or call (606) 558-3571 or (606) 558-3542.

Environmental conference set for October

Everywhere you look shopping malls, hotel chains, businesses and family dwellings are rapidly popping up and eating away at Kentucky's expanse of rolling green acres.

Are we using too much forestland and farmland? Do we need to reuse more industrial sites? Where these issues are taking us will be discussed at the 27th annual Governor's Conference on the Environment Oct. 27-28, 2003, at the Embassy Suites Lexington. The conference will focus on setting the stage for continuing improvements in the environmental management of the Commonwealth.

The Natural Resources and Environmental Protection Cabinet has been undertaking several projects that will simplify access benefiting Kentucky's citizens and industry, including electronic permitting and record keeping, Geographic Information Systems and watershed management.

The conference will also examine the current activities in the field of environmental education and its impacts on the future of the Commonwealth.

Air quality issues are also on the conference agenda. Many new initiatives are being implemented and proposed, along with new federal standards. New sources, as well as existing sources, will be impacted by these standards.

The gubernatorial candidates are being invited to provide an opportunity for a presentation on environmental issues and how they see environmental efforts progressing in coming years.

On Monday evening the conference will host the Governor's Environmental Excellence Awards recognizing those individuals, companies and industries that have made contributions to the environmental field. This year the conference will recognize the winners from both 2002 and 2003. Tickets for the banquet will be $35 and are available through preregistration. Only a limited number of tickets will be available during registration.

The conference will begin with registration at 11 a.m. Monday, Oct. 27, with sessions beginning at 1 p.m. Sessions will continue through Tuesday, Oct. 28, concluding at noon. Registration will be $45 at the conference; early registration is $35 if made by Oct. 10. The fee includes breaks, cash bar reception and other conference expenses. For hotel reservations call the Embassy Suites Lexington at (859) 455-5000 or 1 (800) EMBASSY. Room rates are $112 for single occupancy and $122 for double until Sept. 27. For additional registration and agenda information, visit **www.environment.ky.gov** or call (502) 564-2150, ext 137 for more information.

This year's conference is intended to provide the participants with a glimpse at what we can expect in coming days relating to our environment and what effort we need to undertake to nurture our own future.

Environmental Excellence Awards

Each year many environmentally conscience citizens, businesses and organizations are nominated to receive the Governor's Environmental Excellence Awards. These awards are presented to those individuals and organizations that go "above and beyond" in their dedication to protect, manage and preserve Kentucky's natural resources.

Now is the time to nominate a Kentucky group, business or yourself for the 2003 honor. The nomination form and instructions are available at **www.environment.ky.gov.** The nomination form must be received by the Natural Resources and Environmental Protection Cabinet no later than Sept. 12, 2003. The 2003 awards recipients will be announced at the awards banquet.

The 2002 winners are:

Soil Conservation—*Greg and Joan Ritter*—The Ritters strive to maintain the proper environment for their 240-acre beef cattle farm in Barren County, while at the same time having a viable farming operation to provide income.

Environmental Education—*Mary Kathryn Dickerson*—Chosen for her quest to promote environmental education in schools and for developing resource guides and lesson plans for teachers that can be duplicated nationwide.

Eastern Kentucky Power Cooperative—This corporation's environmental outreach programs have become very successful in raising Kentuckians' awareness and appreciation for the state's natural resources, especially school children.

Industrial Environmental Leadership—*General Motors Corp. Corvette Assembly Plant*—The Bowling Green plant has implemented several waste elimination and/or recycling projects that has shown a total reduction in waste by 580 tons. It's Green Lights Project also saved more than $513,000 in energy costs, while reducing liability and regulatory requirements concerning universal waste.

Energy Efficiency—*Western Kentucky University*—Western slashed energy costs by upgrading lighting, controls and HV/AC units using a guaranteed performance contract. Their efforts caused a $250,000 reduction in energy bills and an improvement in indoor air quality.

Heritage Land Conservation—*Mark S. Brown*—A former legislator, Brown is honored for his role in sponsoring the Heritage Land Conservation Fund Act in 1994, creating a funding mechanism for natural areas acquisition/conservation.

Leadership in Pollution Prevention—*Commonwealth Aluminum, Lewisport Rolling Mill*—This company implemented three types of process improvements in its cast houses that resulted in significant reductions in energy use and the emission of combustion gases.

Mining Reclamation—Western Kentucky—*Kentucky United Coal, LLC permit number 830-0083*—is honored for the company's decision to re-mine and reclaim 130 acres of prelaw disturbance, as well as restore 15 acres of prime farmland.

Mining Reclamation—Eastern Kentucky—*Jamieson Construction, permit number 807-0290*—this small mining company successfully mined 220 acres and used innovative approaches to revegetation and erosion control to promote postmining hayland/pastureland.

Outdoor learning gets children involved in environmental awareness

By Cindy Schafer
Office of the Secretary

Gone are the days when schoolchildren sit in neat little rows of desks learning only about the three R's. Today learning is enjoyed beyond the confines of the four walls of a classroom.

Recently, Lansdowne Elementary students in Lexington finished building a rain garden and compost area on their school's property and planted trees paid for with $1,500 in education grant money.

Outdoor classrooms are nothing new, however, more and more Kentucky schools are beginning to incorporate hands-on learning into their curricula.

Thanks to these grants, students, faculty and parents are putting a lot of effort into creating "green" classrooms. From attracting butterflies to creating riparian buffer zones that protect local waterways, learning is more about the environment than ever before.

Projects like these, paid for through Bluegrass PRIDE (Personal Responsibility in a Desirable Environment), have taken shape at 22 schools and nonprofit organizations throughout the Commonwealth. Each received up to $1,500 to build these outdoor learning environments.

Wyatt Nelson places a tile next to one of the trees paid for with Bluegrass PRIDE fund money.

(Left to right) Raymond York, Wyatt Nelson, Sophia McCarty, Alex Karbo, Heather Nelson, Guernise Polifranc, Timothy York, George Nelson and Cole McCarty stand among the perennials they helped to plant in the rain garden. They also marked each plant and tree with handmade terra cotta tiles provided by the second-grade Health Club. One of the compost bins is shown at left of the group. Photos by Cindy Schafer

About 60 Lansdowne Elementary students, along with help from local scouts, parents and faculty, constructed the framework for the garden and compost areas, prepared the soil and planted the garden's perennials.

Red Chokeberry bushes now form a neat row under the school's science lab windows, while redbud, Kentucky coffee bean, sassafras, red maple, white pine, serviceberry, burr oak, green ash and tulip poplar dot the school's landscape.

Two compost bins, located on each side of the rain garden, will provide enriched soil for future planting areas. Students will even compare the rate of composition between the bins, since one bin contains worms and the other does not.

Lansdowne's Assistant Principal Jana Koehler said that everyone spent a lot of time clearing the areas of weeds, as well as mulching and planting. "The group spent a total of about nine hours after school and during weekends constructing the new garden area," she said.

The rain garden is located beyond a sloping area of the school yard and contains beebalm, phlox, milkweed and purple coneflower. The runoff from rain showers will provide plenty of water for the plants to survive during the summer. The compost area, bushes and twigs will also provide a nesting area for birds and animals throughout the year.

"The most fun part was planting the trees and bushes, and measuring them," said 9-year-old Timothy York. The students measured the circumference and height of each tree and bush and took pictures so that every year they can check the progress of each plant's growth.

The students can also see their handiwork from the lab windows during class. "After all their hard work, the students realize the importance of these plants and also weed control," said Koehler. "Not only do the new plantings provide beauty to the landscape, they also provide a daily lesson in nature."

High-performance school buildings

improving health, efficiency and learning

By Julie Smither
Division of Energy

A high-performance school building incorporates the very best in today's design strategies and building technologies. It provides a healthy and productive environment for students and teachers, featuring quiet, naturally lit learning areas with good air quality.

On April 30, more than 150 Kentucky school superintendents, facility planners and school board members, architects, engineers, and representatives from local utilities and businesses convened to learn about high-performance school buildings at a workshop at Georgetown College.

Recent studies in several states have indicated a strong correlation between increased daylight in classrooms and improved student performance. In one California district, students with the most daylight progressed 20 percent faster on math tests and 26 percent faster on reading tests in one year in comparison to those with the least amount of daylight. A similar study in North Carolina echoed these findings.

High-performance school buildings also increase average daily attendance, resulting in fewer sick days for students and teachers. Tom Benton, principal of Durant Road Middle School in Wake County, N.C., said, "The daylit classrooms . . . are at least partially responsible for our record-high attendance rates . . . We stay around 98 percent."

High-performance school buildings integrate energy efficiency and renewable energy strategies, high-performance mechanical and lighting systems, environmentally responsive site planning and environmentally preferable materials and products. They are also cost effective.

At the workshop, New Jersey Institute of Technology's Deane Evans and Innovative Design's Mike Nicklas, the nation's leading experts on high-performance school building design, showed examples of these schools and the "whole-building" design and procurement strategies used to create them.

CMTA Consultants David Higgins and Tim Morris also discussed the use of geothermal in Kentucky schools, which is among the nation's leaders in using this form of energy-efficient heating and cooling in school buildings.

High-performance school buildings also increase average daily attendance, resulting in fewer sick days for students and teachers.

Karen Reagor, executive director of the Kentucky NEED (National Energy Education Development) Project discussed the advantages of incorporating energy education into the holistic approach of high-performance school buildings. An interesting outcome of high-performance school buildings is student improvement, both in test scores and attendance, and teacher satisfaction. Mark Ryles, director of the Division of Facilities Management in the Kentucky Department of Education, discussed how recently passed legislation has improved opportunities for funding construction of public schools.

The workshop was sponsored by the Kentucky Division of Energy, Kentucky NEED Project and Sustainable Buildings Industry Council. "The whole-building design approach is a tremendous opportunity to benefit from a better learning environment while lowering operating costs over the life of the school building, which may be as long as 35 to 40 years," said John Davies, director of the Kentucky Division of Energy. Hancock County Public Schools superintendent Mike Gray said, "Facilities must be looked upon as a teaching tool. High-performance schools will produce high-performing students, giving us all a wiser and brighter future."

School superintendents and board members, architects, engineers and others learn about high-performance school buildings. Division of Energy photo

Living legacy reminds us of Bickford's commitment to the environment

By Gwen Holt
Division of Forestry

James E. Bickford, the late secretary of the Natural Resources and Environmental Protection Cabinet, passed away in October 2002. But the memory of his spirit and dedication to the environment lives on in a tribute that was celebrated during a very special Arbor Day ceremony.

The Kentucky Division of Forestry felt that this year's Arbor Day event should honor Bickford for his efforts to improve and promote the beauty of the Commonwealth. The division decided to plant a tree in Bickford's memory and worked with the Kentucky National Guard to locate an appropriate site for the ceremony and tree planting.

Throughout his administration, Bickford attended and participated in the division's Arbor Day ceremony. Each year at the ceremony tree seedlings are given away, and Bickford always planted the seedlings he received in his backyard. He once said that his favorite tree was the state tree, the tulip poplar, so in his honor a tulip poplar was planted near the lake on the grounds of the Boone National Guard Center. A memorial marker will also be placed at the base of the tree to honor Bickford.

The ceremony featured the presentation of the colors by the Kentucky National Guard and the singing of the national anthem. Henry C. List, secretary of the Natural Resources and Environmental Protection Cabinet, welcomed Secretary Bickford's widow, Shirley, and other invited guests to the dedication. "I think it's important we select a living memorial that matches the character of Secretary Bickford. I believe we've done that here today. The secretary would be very honored," List explained.

The emotion of the moment was not forgotten as honorary speaker First Lady Judi Patton reflected on her fond memories of Bickford. "This Arbor Day is especially important because it provides us with an opportunity to remember a very unique person whom I considered a dear friend, General Jim Bickford. As we pause to reflect on the impact that General Bickford had on our lives and on the entire state, let us not forget his vision of a cleaner Kentucky. On this Arbor Day, let us commit ourselves to carry on his vision," Patton said.

Arbor Day in Kentucky is always celebrated on the first Friday in April.

Environmental club wins Kentucky Envirothon

By Martin Bess
Division of Conservation

For the second consecutive year, the Fayette County 4-H Environmental Club has taken home the championship title for competing in the Kentucky Envirothon. The competition began with 36 teams from across Kentucky contending for the top five spots from each of the two regional competitions, with 10 teams qualifying for the state competition. The May event took place at the Kentucky Leadership Center near Nancy, Ky.

The Envirothon is an international environmental competition for high-school students. The Envirothon idea is simple—combine the proven concepts of hands-on education with the excitement of good competition and the fun of spending a day in the outdoors. The Envirothon is a series of contests in which teams of students compete to solve environmental problems. It encourages constantly changing curricula and helps to build ties between schools, organizations and communities in preparing students for competition.

Students were tested on their environmental knowledge in five areas—soils, aquatics, forestry, wildlife, and agricultural land conservation and preservation.

The Fayette County 4-H Environmental Club won four out of the five categories, including first place in the oral presentation competition based on a scenario dealing with agricultural land conservation and preservation.

The Fayette County 4-H Environmental Club will go on to compete in the 16th Annual Canon Envirothon Championship at Mount Saint Mary's College in Emmitsburg, Md., July 25-Aug. 1, 2003. Students will compete against 53 states and provinces from the United States and Canada.

Kentucky Envirothon sponsors include the Kentucky Association of Conservation Districts, Martin Planter Attachments, Touchstone Energy, Morehead State University, Kentucky Department of Agriculture, Kentucky Farm Bureau, Kentucky Association of Conservation Districts' Auxiliary, Kentucky Environmental Education Council, Kentucky Department of Fish and Wildlife Resources, Rowan County Conservation District, Todd County Conservation District and the Natural Resource Conservation Service. Other assistance was provided by the Kentucky Division of Forestry, Kentucky Division of Water, USDA Forestry Service and Kentucky Division of Conservation.

Awards

Kentucky Division of Energy receives national award

By Julie Smither
Division of Energy

The Kentucky Division of Energy was recognized at an awards ceremony in Washington, D.C., on April 15 for its efforts with ENERGY STAR in encouraging Kentucky citizens to use energy-efficient products and services in their homes.

Forging a strong ENERGY STAR partnership network of retailers, manufacturers, utilities, home industry professionals, civic groups, and nonprofit and government agencies, the Division of Energy spread the ENERGY STAR word across the Commonwealth. ENERGY STAR-labeled appliances, heating and cooling equipment, lighting and windows save Kentuckians money through reduced energy use. In 2001 alone, ENERGY STAR helped Americans save enough energy to power 10 million homes and reduce the air pollution equivalent to taking 12 million cars off the road—all while saving consumers $6 billion.

U.S. EPA Administrator Christine Whitman (left) presents the ENERGY STAR award to John Davies and Karen Wilson. Division of Energy photo

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy coordinate the ENERGY STAR program. The Kentucky Division of Energy has been a partner in the program since September 2001.

"The Kentucky Division of Energy is pleased to be a part of the ENERGY STAR program," said John Davies, division director. "By working with the ENERGY STAR program, we have been able to educate Kentuckians about affordable and energy-efficient options that save money while protecting the environment."

Commission honors scientist and volunteers

By Cecilia Mitchell
Kentucky State Nature Preserves Commission

The Kentucky State Nature Preserves Commission (KSNPC) annually presents awards to an individual who has made significant contributions toward protecting the state's biological diversity and to a volunteer who has assisted with ongoing preserve stewardship activities.

At an awards ceremony this spring, KSNPC presented its annual Biological Diversity Protection Award to Dr. Guenter A. Schuster of the Department of Biological Sciences at Eastern Kentucky University. Schuster is a nationally recognized authority on freshwater mussels, crayfishes and caddisflies, and he has authored numerous publications on these diverse groups of aquatic organisms. He has contributed more than 20 years to conserving and researching Kentucky's aquatic biodiversity. In addition to his teaching duties, Schuster is currently preparing publications on Kentucky's crayfishes and mussels.

In making the award presentation to Schuster, commission chair Clara Wheatley said, "I truly consider it a privilege to present this award to an individual who has devoted his life's work to studying and researching our native aquatic species. The information Schuster has contributed is invaluable to our efforts to conserve aquatic species, which are some of the most threatened animals in this country."

KSNPC's first-ever Volunteer Steward Award was presented to the Cumberland Chapter of the Sierra Club's Service Trip program leaders Martha Payne, Darren Payne and Carol von Lanken. These leaders have consistently assisted the KSNPC's Nature Preserves and Natural Areas Branch with countless hours of trail building, brush cutting and invasive plant eradication at various state nature preserves. Their efforts have helped ensure the protection of many rare species, including the federally endangered Short's goldenrod (*Solidago shortii*) and the Virginia big-eared bat (*Corynorhinus townsendii virginianus*).

Wheatley commended the leaders saying, "We appreciate the years of assistance you have provided. Our staff is inspired by knowing they can depend on the generosity of such dedicated citizens to continue to assist as our preserve system grows."

To read the full presentation speech to the award recipients and to review additional information about the KSNPC, visit **www.kynaturepreserves.org.**

EQC recognizes Kentuckians making a difference

By Leslie Cole
Environmental Quality Commission

A college president, a Kentucky author and a Winchester soft drink company were among 15 honorees that received Earth Day awards from the Kentucky Environmental Quality Commission (EQC).

The awards recognize Kentuckians for their outstanding commitment and service in protecting the environment.

The EQC recognized the following awards recipients on April 14, 2003, at the Governor's Mansion to celebrate the 33rd anniversary of Earth Day.

Larry Dwight Shinn, president of Berea College—Public Service Award—for his strong commitment to sustainable living and the creation and development of the Berea College Ecovillage.

Ale-8-One and president/CEO/ owner Frank A. Rogers, Clark County—for being one of the largest soft drink producers in Kentucky and one of the few companies that still sells its product locally in returnable bottles.

Katie Poston and Kayla Lancaster, Boone County—for their efforts as fifth-grade students at Burlington Elementary School to convince school officials to implement a paper recycling program.

Helen Alexander, chairwoman, Bluegrass Conservancy, Fayette County—for her efforts to conserve farmland in the Bluegrass Region.

Jordan O'Rylee, education director, Dinsmore Homestead, Boone County—for the development of an environmental education program that links history and the environment with student and family responsibility.

Donna Griffin, Jefferson County Public Schools—for her work to engage students in real-world learning, discovery and exploration at the Blackacre Nature Preserve.

Morehead State University Environmental Awareness Club, Rowan County—for their efforts to clean up Tygarts Creek and build environmental awareness among college students.

EQC Commissioner Gordon Garner (right) praised Frank Rogers III, president/CEO and owner of Ale-8-One for "continuing his company's tradition of being a fine Kentucky soft drink and a responsible steward of our environment."
Creative Services photo

Chemical Weapons Working Group, Madison County—for the group's efforts to research and demonstrate alternative technology for the destruction of nerve and other chemical agents stored at the Bluegrass Army Depot.

Kentucky Envirothon, Statewide—a competition that engages high-school students in hands-on environmental problem solving while building ties between schools and communities. (Find out more about the Kentucky Envirothon on Page 18.)

Donna Herndon and Bill Wells, City of Murray and Calloway County—for developing the "Make a Difference Day" recycling program.

Hopkins County 4-H Environmental Camp—for the efforts of the Hopkins County Extension Council, 4-H Council, West Hopkins Accelerated School and Youth Development Services for organizing and funding an environmental camp to educate fourth- and fifth-grade students about natural resource stewardship.

Green River Conservation Partnership, Green and Taylor counties—for the partnership between Dr. Richie Kessler, The Nature Conservancy, and Mike Turner, U.S. Army Corps of Engineers, to restore and protect the upper Green River.

Ockerman Elementary School, Boone County—a resource school that uses flower and butterfly gardens, birdhouses and feeders and other outdoor education facilities to improve test scores while instilling an enthusiasm for learning.

Barbara Kingsolver, Kentucky author/novelist—for writing great stories while dealing with important environmental issues of the day.

Wm. Horace Brown, Shelby County—Lifetime Service Award—as chair of the Kentucky Environmental Education Council, past chair of the EQC and a longtime leader in promoting environmental awareness and action.

Garner, Ormsbee appointed to commission

By Leslie Cole
Environmental Quality Commission

Gov. Paul Patton has appointed Gordon Garner and Dr. Lindell Ormsbee to the Environmental Quality Commission (EQC) for terms of four years each through Jan. 1, 2007.

Garner, a resident of Prospect in Metro Louisville, is a professional civil engineer who retired last year after serving 18 years as director of the Louisville Jefferson County Metropolitan Sewer District. Since retirement, Garner has served as a consultant to China, advising the country on wastewater issues. He also is a board member on the Ohio River Sanitation Commission.

Ormsbee, a resident of Lexington and a native of Hopkinsville, is a Raymond-Blythe endowed professor of civil engineering at the University of Kentucky and currently serves as the associate director of the Kentucky Water Resources Research Institute. Ormsbee has served as a visiting scholar with the Division of Water, assisting the state transition to a watershed management framework. In addition to being a licensed professional engineer, he is the only surface water hydrologist in Kentucky to be certified by the American Institute of Hydrology.

Garner and Ormsbee join EQC commissioners Aloma Dew, Owensboro; Betsy Rudd Bennett, Louisville; Gary Revlett, Shelbyville; Patty Wallace, Louisa; and Jean Dorton, Paintsville.

The EQC is a seven-member citizen board created under state law to facilitate public discussion and resolution of environmental issues, monitor environmental trends and conditions, promote partnerships to protect the environment and serve as an advisory board to the governor on environmental matters.

EQC commissioners (standing, left to right) Gordon Garner, Aloma Dew, Lindell Ormsbee, Gary Revlett, (seated, left to right) Patty Wallace, Jean Dorton and Betsy Rudd Bennett. Creative Services photo

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